

# National Park Service



EXPERIENCE  
YOUR  
AMERICA

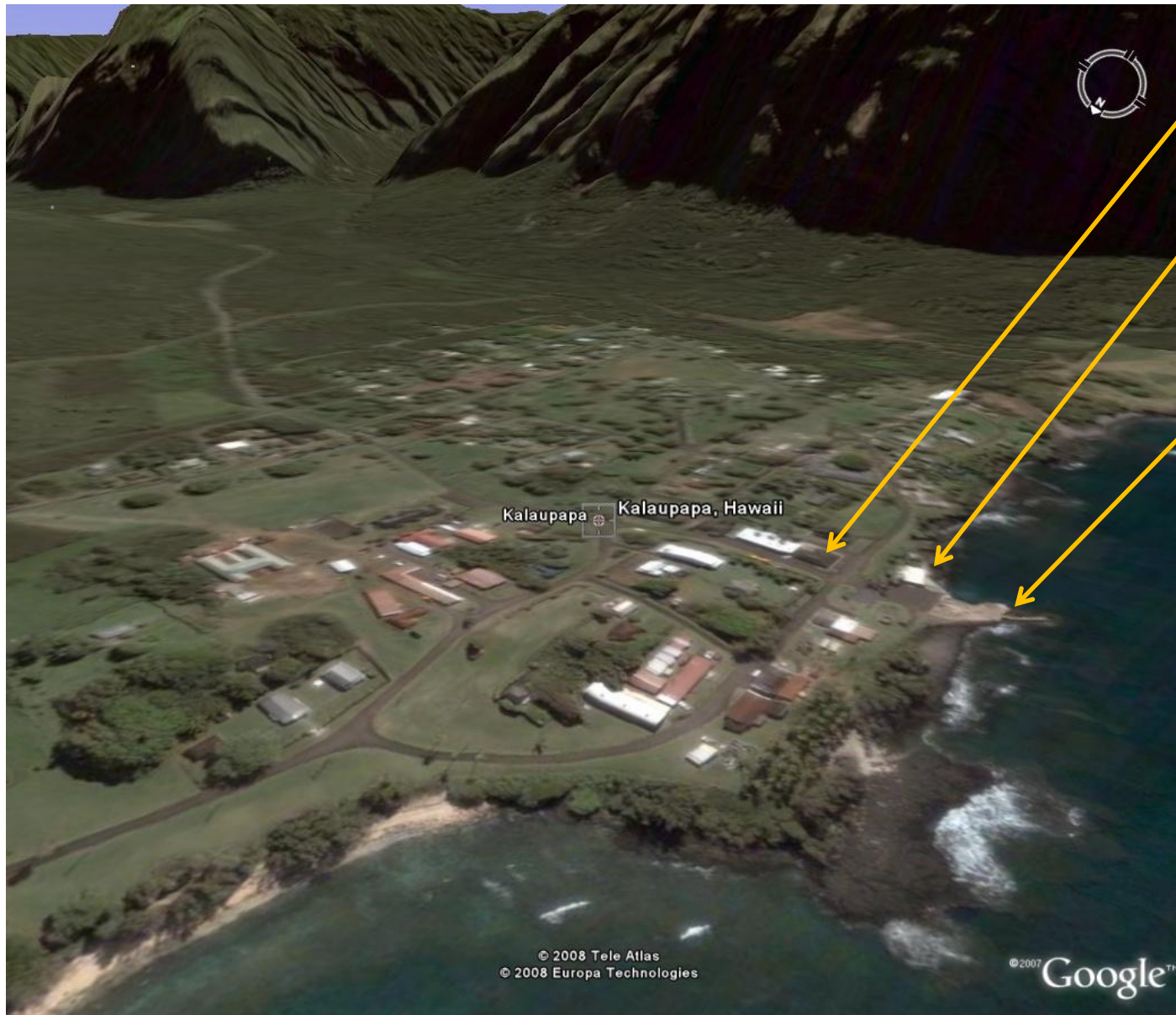
## **KALAUAPAPA NHP**

### **Repair Kalaupapa Dock Structures to Ensure Continued Barge Service (Emergency)**



**FY12 LINE ITEM CONSTRUCTION**

## Kalaupapa National Historic Landmark



General Store  
& Gas Station

Warehouse

Dock

## Justification

- Seasonal barge only method:

- fuel
- bulk supplies
- large equipment, vehicles
- construction material



- Emergency repairs required to continue barge service
  - Resident community and operations of NPS and State require sustained barge service
  - Failure of bulkhead wall would severely damage adjacent historic warehouse
  - Failure of old pier pilings during barge unloading operations would cause catastrophic safety breakdown.

## Barge Arrival

- Two tug operation
- Limited to calm sea periods
- Limited size of barge



### Cargo:

- Fuel
- Automobiles, large equipment
- Bulk Supplies
- Construction Equipment & Material

## Environmental Impacts

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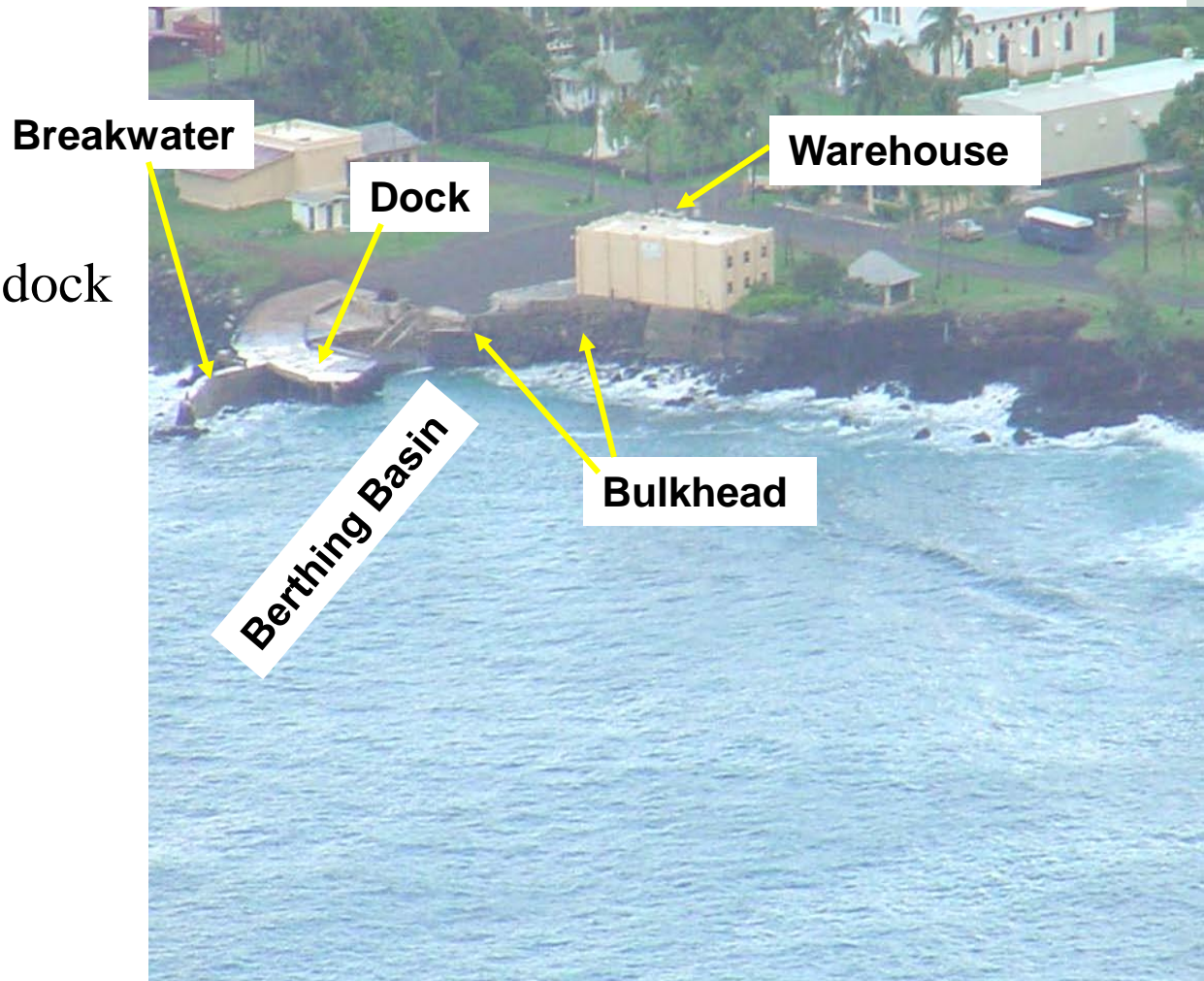
Emergency Repairs required due to harsh winter conditions and age of structure

## Project Components

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### Recommendation

- Emergency repair to dock structures



## Continuation of Repairs begun by State of Hawaii

2007 and 2009 State:

- Repaired bulkhead wall
- Replaced bits and bollards
- Repaired concrete on dock structure
- Replaced mooring winch



## Bulkhead Wall Repair 2007 by State

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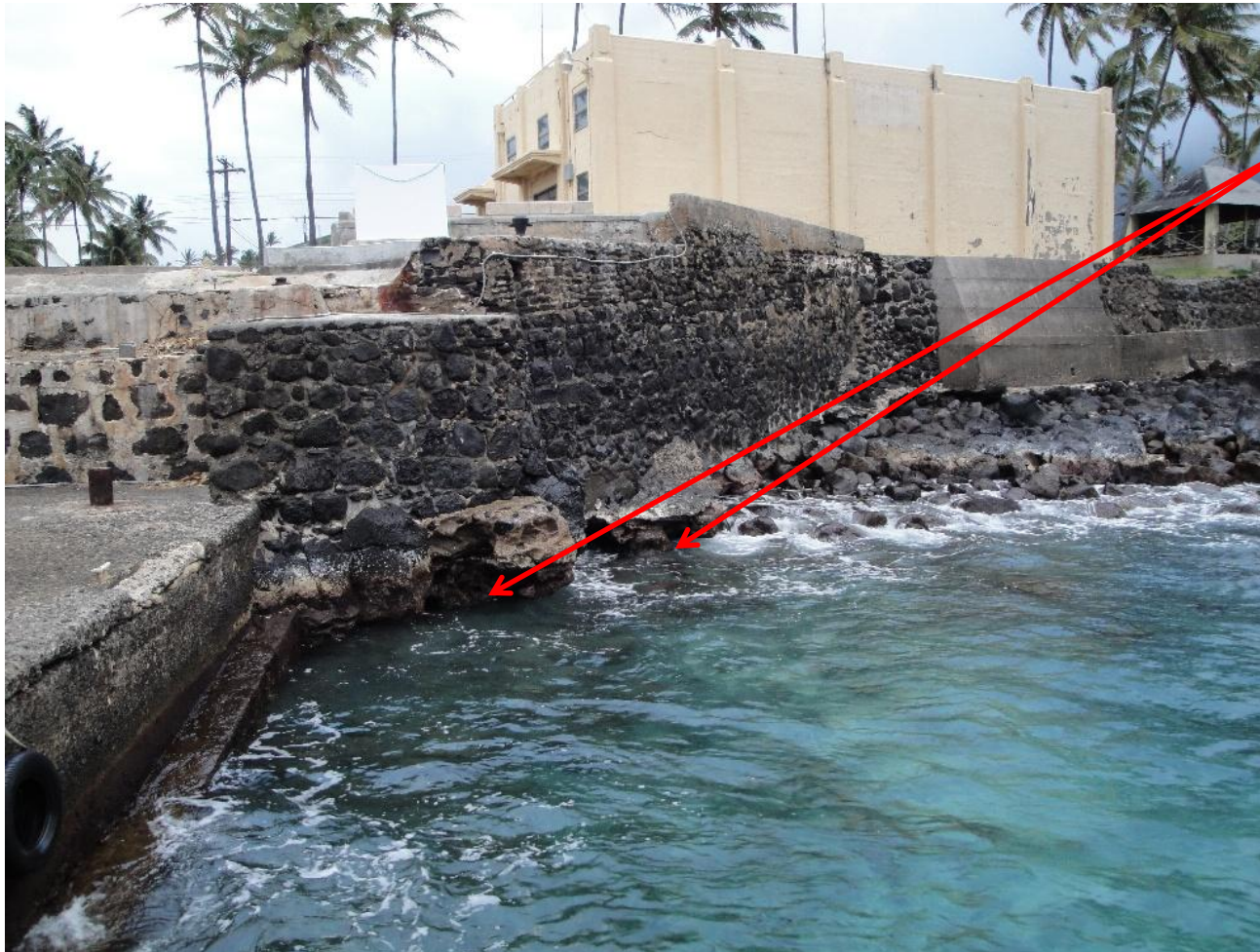


Before

After



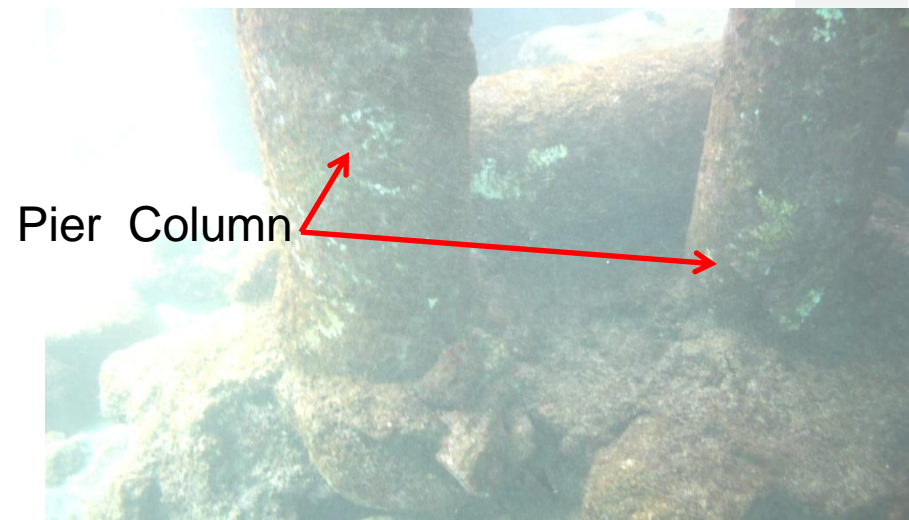
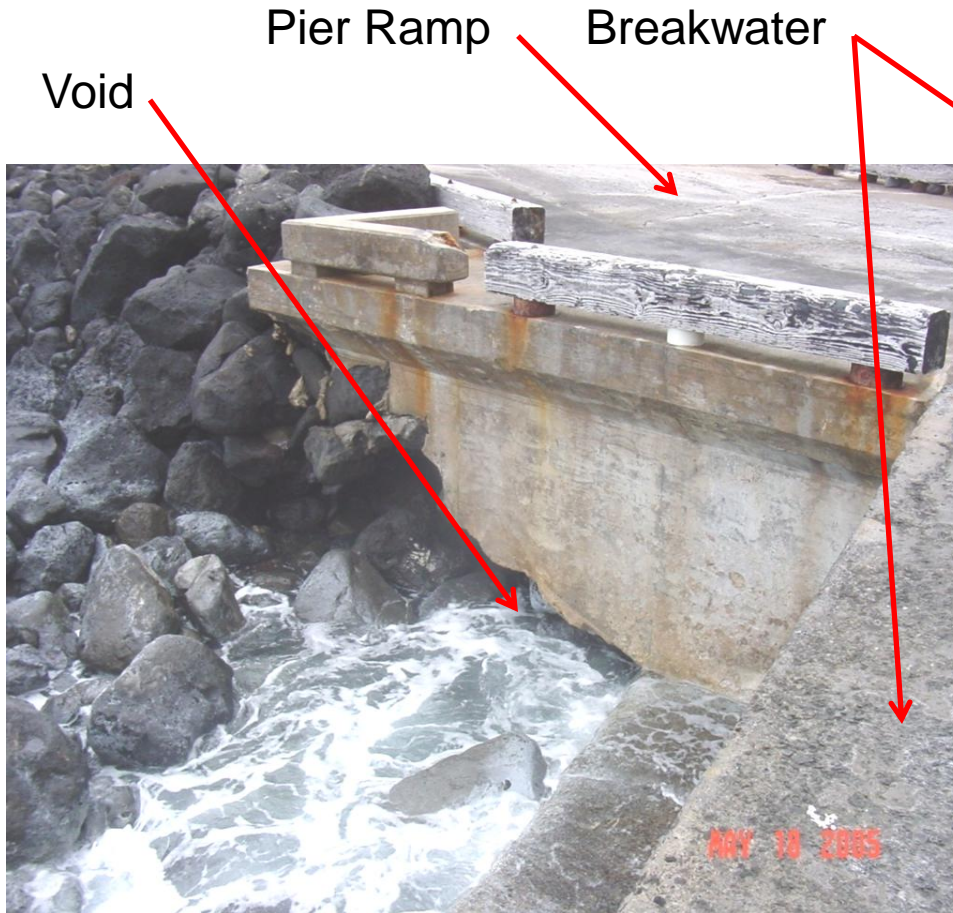
## Bulkhead Wall Repair 2012 by NPS



Voids at bulkhead  
toe

## Emergency Repair to Dock Structures–NPS 2012

- Repair and fill voids created by wave impacts
- Relocate displaced armoring stones
- Repair concrete pier supports



## Repair Breakwater

- Repair concrete cap
- Reestablish armoring stones



## Repair Concrete Beams and Pile Caps

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- Repair concrete beams
- Repair concrete pile caps
- Repair concrete curbs



# Kalaupapa National Historical Park

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Questions?

